

IN THE
UNITED STATES PATENT AND TRADEMARK OFFICE

Inventor(s): Amir Doron

Confirmation No.: 4168

Application No.: 09/360,419

Examiner: Dorothy Wu

Filing Date: July 23, 1999

Group Art Unit: 2615

Title: Digital Still Camera with Still and Motion Image Capabilities

Mail Stop Appeal Brief-Patents
Commissioner For Patents
PO Box 1450
Alexandria, VA 22313-1450

TRANSMITTAL OF APPEAL BRIEF

Sir:

Transmitted herewith in **triplicate** is the Appeal Brief in this application with respect to the Notice of Appeal filed on 3/9/2004.

The fee for filing this Appeal Brief is (37 CFR 1.17(c)) \$330.00.

(complete (a) or (b) as applicable)

The proceedings herein are for a patent application and the provisions of 37 CFR 1.136(a) apply.

() (a) Applicant petitions for an extension of time under 37 CFR 1.136 (fees: 37 CFR 1.17(a)-(d) for the total number of months checked below:

() one month	\$110.00
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(X) The extension fee has already been filled in this application.

() (b) Applicant believes that no extension of term is required. However, this conditional petition is being made to provide for the possibility that applicant has inadvertently overlooked the need for a petition and fee for extension of time.

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Respectfully submitted,

Amir Doron

By Michael H. Jester 3/9/04

Michael H. Jester

Attorney/Agent for Applicant(s)

Reg. No. **28,022**

Date: **3/9/2004**

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3-25-04
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BEFORE THE UNITED STATES PATENT AND TRADEMARK OFFICE
BOARD OF PATENT APPEALS AND INTERFERENCES

In re Patent application of:)
Amir Doron) Examiner: Dorothy Wu
Serial No.: 09/360,419) Group Art Unit: 2615
Filed: 7/23/1999)
For: *Digital Still Camera with Still and*)
Motion Image Capabilities)

BRIEF ON APPEAL

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Sir:

This is an appeal from the final Office Action mailed November 18, 2003 rejecting Claims 1-25 and the subsequent Advisory Action mailed February 12, 2004 rejecting Claims 11-19 and 21-25 set forth in APPENDIX A hereto, all remaining claims in the application.

A. *Real Party in Interest*

The real party in interest is Hewlett-Packard Development Company, LP, a limited partnership established under the laws of the State of Texas and having a principal place of business at 20555 S.H. 249 Houston, TX 77070, U.S.A. (hereinafter "HPDC"). HPDC is a Texas limited partnership and is a wholly-owned affiliate of Hewlett-Packard Company, a Delaware Corporation, headquartered in Palo Alto, CA. The general or managing partner of HPDC is HPQ Holdings, LLC.

B. Related Appeals and Interferences

There are no related appeals or interferences.

C. Status of the Claims

Claims 11-19 and 21-25 are pending in the application.

Claims 11-19 and 21-25 stand rejected.

Claims 11-19 and 21-25 are appealed.

D. Status of Amendments

In a final Office Action mailed November 18, 2003, Claims 1-25 were rejected for alleged obviousness. An Amendment After Final Rejection under 37 CFR Sec. 1.116 was mailed to the USPTO on January 14, 2004 canceling Claims 1-10 and 20, and amending the specification. In an Advisory Action mailed by the USPTO on February 12, 2004, the examiner declined to allow any of the remaining claims but indicated that the proposed amendments would be entered for purposes of appeal. The Advisory Action contains a clerical error in indicating that the status of the claims on appeal would be "Claim(s) rejected: 1-25." This appeal is limited to Claims 11-19 and 21-25.

It is noted that Claim 25 contains a typographical error in that it should depend from Claim 21 instead of Claim 1. Correction of this error by examiner's amendment is requested and this proposed correction is reflected in APPENDIX A.

E. Summary of the Invention

As set forth on page 2, line 19 through page 3, line 7 of the specification of the above-captioned application, a conventional digital still camera (DSC) takes only a single image at a time, usually of a much higher resolution than the images taken by a conventional video camera.

The DSC stores the single image in memory using a still image compression algorithm. Since most conventional DSCs currently require delays between the taking of successive pictures it is difficult to shoot fast moving objects. Some existing DSCs can take several successive frames at once. They have the capability of taking successive pictures of a moving object and replaying them in sequence, although the motion images are akin to stop motion, i.e. they are jerky and unrealistic, as opposed to video motion images replayed from a de-compressed MPEG format.

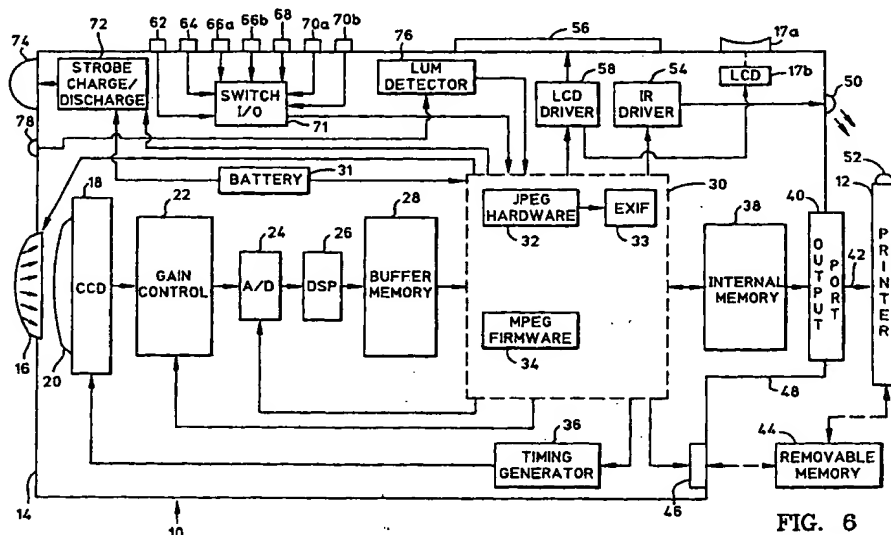
As set forth on page 3, line 9 through page 3, line 14 of the specification of the above-captioned application, if one desires to have a DSC create a motion video segment it is difficult to keep up with the thirty frames per second required to provide motion that is not jerky and unrealistic. A conventional video camera employs significant hardware dedicated to performing fast compression of sequential images. A conventional DSC on the other hand has circuitry designed to perform fast compression of a single high resolution image in order not to introduce an unacceptable delay in the ability to take successive still pictures.

As set forth on page 3, line 16 through page 3, line 20 of the specification of the above-captioned application, in the past, DSCs have been commercially available that offer a motion capture mode. Typically they implement a parallel architecture that offers two alternative paths through the hardware as shown in Figs. 3 and 4 of the subject application. In each case, the image data is stored in a compact flash card memory, denoted CF. This solution is disadvantageous because of the cost of the additional hardware required.

The above-captioned applicant has invented a method (Claim 11) of selectively generating still or motion images with a digital camera. The method involves selectively generating a first sequence of high resolution still image files or a second sequence of low resolution still image files and storing the image files in the memory in accordance with a predetermined still image data compression standard. Thereafter the low resolution image files are selectively retrieved from the memory. Utilizing firmware, the low resolution image files are then converted to a motion video sequence in accordance with a predetermined motion image data compression standard. The motion video sequence is then stored. The sequence of low resolution images is taken at a rate sufficient to ensure substantially non-jerky motion when the motion video sequence is replayed.

The above-captioned applicant has also invented a camera (Claim 21) comprising an image sensor mounted in a housing for receiving light and generating output signals representative of an image and a shutter button mounted to the housing. A circuit processes the output signals in response to actuation of the shutter button. A control circuit is connected to the processing circuit for selectively generating a first sequence of high resolution still image files or a second sequence of low resolution still image files and for executing firmware to convert the second sequence into a motion video sequence.

Fig. 6 reproduced hereafter is a block diagram of a digital camera in accordance with one embodiment of the present invention that has both motion and still mode capabilities.



Amir Doron (Applicant)

Fig. 7 reproduced hereafter is a block diagram illustrating the dual mode camera of Fig. 6. The present invention provides a DSC that offers a motion capture mode using a hybrid architecture in which the JPEG hardware component 32 (Fig. 6) effectively replaces the need for MPEG hardware, with the MPEG functions being carried out, in the case of the motion capture mode, by MPEG firmware 34 (Fig. 6) executed by the micro-controller of the control circuit 30 (Fig. 6).

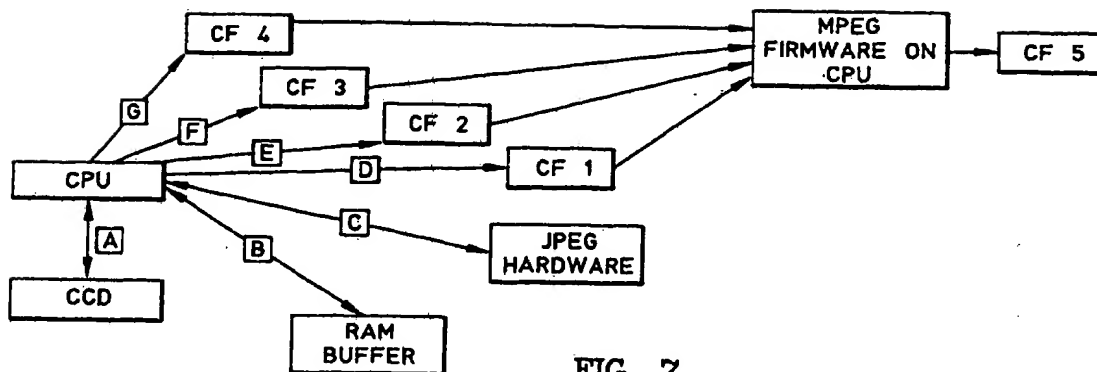


FIG. 7

Amir Doron (Applicant)

F. Issues

Whether the subject matter of Claims 11-14, 16-17, 21-22 and 24 would have been obvious under 35 U.S.C. Sec. 103(a) over U.S. Patent No. 6,148,031 of Kato in view of U.S. Patent No. 5,440,343 of Parulski et al.

Whether the subject matter of Claims 15 and 19 would have been obvious under 35 U.S.C. Sec. 103(a) over U.S. Patent No. 6,148,031 of Kato, in view of U.S. Patent No. 5,440,343 of Parulski et al. and further in view of U.S. Patent No. 6,297,870 of Nanba.

Whether the subject matter of Claims 18 and 23 would have been obvious under 35 U.S.C. Sec. 103(a) over U.S. Patent No. 6,148,031 of Kato, in view of U.S. Patent No. 5,440,343 of Parulski et al. and further in view of published U.S. Patent Application No. 2002/0012051 of Mizoguchi.

Whether the subject matter of Claim 25 would have been obvious under 35 U.S.C. Sec. 103(a) over U.S. Patent No. 6,148,031 of Kato, in view of U.S. Patent No. 5,440,343 of Parulski et al. and further in view of U.S. Patent No. 6,223,190 of Aihara et al.

G. Grouping of Claims

The rejected claims do not stand or fall together. The grouping of claims, which are independently patentable, is as follows:

Claims 11-19 directed to a method of selectively generating still or motion images with a digital camera..

Claims 21-25 directed to a camera.

H. Argument

In paragraph 3 of the final Office Action, Claims 11-14, 16-17, 21-22 and 24 were rejected for alleged obviousness over Kato in view of Parulski et al. The examiner admitted on page 4 that Kato does not teach selectively generating a first sequence of high resolution still image files or a second sequence of low resolution still image files. However, the examiner alleges in paragraph 3 of the final Office Action that it would have been obvious to "combine the camera taught by Kato with the generation of low and high resolution images taught by Parulski et al. to make a camera with the limitations of Kato that generates high resolution images for still images and low resolution images to later be used as motion images." The examiner alleges that one of ordinary skill "would have been motivated to make such a modification to obtain still images of high quality and motion images with less data such that it is possible to capture the motion images at an adequate frame rate." (final Office Action, page 4)

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art references when combined must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art and not based on applicant's disclosure. *In re Vaeck*,

947 F.2d 488, 20 USPQ.2d 1438 (Fed. Cir. 1991). In rejecting Claims 11-14, 16-17, 21-22 and 24 under 35 U.S.C. §103(a) based on the combination of Kato and Parulski et al. the Examiner has not met the three requirements recited in *In re Vaeck*.

As apparently admitted by the examiner, there is no express suggestion in either Kato or Parulski et al. to combine the references as proposed by the examiner. Kato is concerned with the ability to selectively record a single high resolution still picture during a motion video sequence (see column 2, lines 30-34 and column 5, lines 7-11). Kato records the motion video sequence in NTSC format (column 4, lines 11-27). Kato is not concerned with generating a sequence of low resolution still image files (e.g. JPEG files) for conversion into a motion video sequence (e.g. MPEG files). Parulski et al. is no more pertinent to Applicant's claimed invention than the prior art illustrated in Figs. 3 and 4 of the above-captioned application and described on page 3, lines 16-20 thereof. In other words, the Parulski et al. camera has a parallel *hardware* architecture that offers two alternative paths for recording still and motion image sequences. Parulski et al. has only a very top level block diagram for the hardware required (Fig. 1) and minimal explanation thereof (column 2, line 66 through column 3, line 37). In particular, no details are given for the circuitry and operation of camera control processor unit 14, signal processing electronics 15 and recording unit 16. Most of the disclosure of Parulski et al. is concerned with the column selective "charge clearing" structures and column selective "charge parking" structures of the image sensor. The different architecture of the image sensor allows for different image aspect ratios to be provided for motion and still modes.

The examiner's proposed modification of Kato's complex inter-frame correlation and intra-frame coding scheme to accommodate a different coding scheme used by Parulski et al. amounts to prohibited hindsight reconstruction. As motivation for making such a modification, the examiner does not cite any text from either prior art patent, but instead relies upon a generalized statement that "[o]ne of ordinary skill would have been motivated to make such a modification to obtain still images of high quality and motion images with less data such that it is possible to capture the motion images at an adequate frame rate." It is improper to use the Applicants' own disclosure as an instruction book on how to reconstruct the prior art. *Panduit Corp. v. Dennison Mfg. Co.*, 810 F.2d 1561 (Fed. Cir. 1987).

In paragraph 2 of the final Office Action the examiner apparently cites *In re Fine*, 837 F.2d 1071 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347 (Fed. Cir. 1992) for the proposition that knowledge generally available to one of ordinary skill in the art can be relied upon for teaching, suggestion or motivation to combine or modify the prior art, even in the absence of some express teaching, motivation or suggestion to combine in the prior art references themselves. The examiner then states that “[o]ne of ordinary skill would have been motivated to combine the references and inter-frame code the medium resolution still images to generate a motion video sequence for achieving greater compression in the data, and thus, storing longer video sequences in memory, while retaining higher resolution, quality still images.” The examiner then further states that “[i]t is well-known that it is desirable to process image data so that it requires less storage space while sacrificing as little image quality as possible.”

The examiner’s broad conclusory statement cannot supply the required motivation in light of the lack of reasonable expectation of success in making the proposed combination. The inter-frame correlation and intra-frame coding of Kato is so complex that a modification thereof that would somehow provide a motion video sequence made up of low resolution image files using the different coding techniques of Parulski et al. would not have had a reasonable chance of success. In order for a proposed modification of a prior art reference to have been considered obvious to one of ordinary skill in the art, there must have been a reasonable expectation of success. *Brown & Williamson Tobacco Corp. V. Philip Morris Inc.*, 229 F.3d 1120 (Fed. Cir. 2000). Both the suggestion to modify and the expectation of success must be founded in the prior art and not in the applicants’ disclosure. See *In re O’Farrell*, 853 F.2d 894 (Fed. Cir. 1988). The modifications of the camera of Kato that would be required to incorporate the coding technique of Parulski et al. would be so substantial that no person of ordinary skill would attempt the same.

Even assuming, for the sake of argument, that Parulski et al. suggests modifying the camera of Kato to use the coding techniques of Parulski et al., the combination of Kato and Parulski et al. proposed by the examiner wouldn't even operate. The coding techniques of Parulski et al. require the utilization of a special image sensor 12 (Fig. 1) with the column selective “charge clearing” structures and column selective “charge parking” structures. Thus the coding techniques of Parulski et al. would not be compatible with the image pickup device

10 (Fig. 1) of Kato. If the special image sensor 12 (Fig. 1) of Parulski et al. were substituted for Katos's image pickup device 10, the output of the former would not be compatible with the digital signal processor circuit 14 (Fig. 1) of Kato. Where prior art references taken in combination would produce a seemingly inoperative device, they teach away from the combination and cannot create a *prima facie* case of obviousness. *McGinley v. Franklin Sports, Inc.*, 262 F.3d 1339 (Fed. Cir. 2001). Parulski et al. teaches away from the examiner's proposed modification of Kato, and therefore it would not have been obvious. See *In re Gordon*, 733 F.2d 900 (Fed. Cir. 1984).

The Board must base any affirmance of an obviousness rejection on an analysis of the specific claim limitations, and not on the patent examiner's mere conclusions about those features. *In re Thrift*, 298 F.3d 1357 (Fed. Cir. 2002). Even if Kato and Parulski et al. were combined in the manner proposed by the examiner, the end result would still not be the invention of independent Claims 11 and 21 which require *firmware* conversion of the sequence of low resolution of still image files into a motion video sequence. In the second Office Action, at the end of paragraph 2, the examiner states "[a]s software, hardware, and firmware are all capable of implementing image processing methods, requiring firmware conversion would not render the invention of independent claims 1, 11, 20 and 21 patentably distinct." Respectfully, however, the examiner's position is based on a misunderstanding of the applicable law. Firstly, whether an invention is "patentably distinct" is an issue in restriction practice and double patenting, and has no bearing on obviousness. Secondly, a motivation to combine teachings of the prior art references requires a desirability of making the proposed combination, not merely a trade off. A trade off concerns what is feasible, not what is necessarily desirable. Motivation to combine requires the latter. *Winner International Royalty Corp. v. Wang*, 202 F.3d 1340 (Fed. Cir), *cert denied*, 530 U.S. 1238 (2000).

For the foregoing reasons, the obvious rejections of Claims 11-14, 16-17, 21-22 and 24 based on the combination of Kato and Parulski et al. should be reversed. Since the rejections of dependent Claims 15, 18, 19, 23 and 25 are similarly based on the combination of Kato and Parulski et al., along with other references, they should also be reversed for the same reasons set forth above.

I. Conclusion

It is submitted that for the reasons explained above, the subject matter of Claims 11-19 and 21-25 would not have been obvious to one of ordinary skill in the art based on the cited prior art. Accordingly, the rejections of Claims 11-19 and 21-25 should be reversed.

Please charge the fee of \$330 for filing this brief to Deposit Account No. 08-2025 held by the HEWLETT-PACKARD COMPANY.

March 9, 2004

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Michael H. Jester", with a stylized flourish at the end.

Michael H. Jester
Attorney for Applicant
Registration No. 28,022

APPENDIX A

11. A method of selectively generating still or motion images with a digital camera,
2 comprising the steps of:

selectively generating a first sequence of high resolution still image files or a second
4 sequence of low resolution still image files and storing the image files in the memory in
accordance with a predetermined still image data compression standard;

6 selectively retrieving the low resolution image files from the memory;

converting the low resolution image files to a motion video sequence in accordance with
8 a predetermined motion image data compression standard, the conversion being performed with
firmware; and

10 storing the motion video sequence.

12. The method of Claim 11 wherein the predetermined still image data compression
2 standard is JPEG and a plurality of JPEG files are generated.

13. The method of Claim 11 wherein the predetermined motion image data
2 compression standard is MPEG.

14. The method of Claim 11 wherein the still image data compression is performed
2 with a hardware JPEG file conversion component.

15. The method of Claim 12 wherein the JPEG files are embedded in a plurality of
2 corresponding EXIF files.

16. The method of Claim 11 wherein the sequence of low resolution images is taken
2 at a rate sufficient to ensure substantially non-jerky motion when the motion video sequence is
replayed.

17. The method of Claim 16 wherein the rate is approximately thirty frames per
2 second.

18. The method of Claim 11 wherein the first sequence of high resolution still image files is generated in response to each momentary actuation of a shutter button and the second sequence of low resolution still image files is generated in response to the shutter button being actuated and held in an ON condition for a predetermined duration longer than the momentary actuation.

19. The method of Claim 11 and further comprising the step of selectively displaying selected ones of the high resolution still images or the motion video sequence.

21. A camera, comprising:
an image sensor mounted in a housing for receiving light and generating output signals representative of an image;
a shutter button mounted to the housing;
a circuit for processing the output signals in response to actuation of the shutter button;
and
a control circuit connected to the processing circuit for selectively generating a first sequence of high resolution still image files or a second sequence of low resolution still image files and for executing firmware to convert the second sequence into a motion video sequence.

22. The camera of Claim 21 wherein the still image files are generated in accordance with a predetermined still image data compression standard and the second sequence of low resolution still image files are converted into a motion video sequence in accordance with a predetermined motion image data compression standard.

23. The camera of Claim 21 wherein the control circuit generates the first sequence in response to successive momentary actuations of the shutter button and generates the second sequence in response to the shutter button being actuated and held in an ON condition for a predetermined duration longer than a momentary actuation.

24. The camera of Claim 21 wherein the control circuit includes means for permitting a user to selectively observe on a display selected ones of the high resolution still image files or the motion video sequence.

25. The camera of Claim 21 wherein the control circuit causes a markup file to be
2 generated in response to user commands.